1960

Control and Elimination of Field Bindweed

Cooperative Extension
South Dakota State University

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Control of Dairy Livestock Pests

INSECT PESTS such as lice and flies seriously reduce milk production in dairy herds. For example, heavy horn fly populations can reduce milk production by 10 to 15%. Comparable figures are available for lice and other fly pests. For maximum production it is necessary to include insect control in your dairy management program.

The following information will serve as a guide in the selection and use of chemicals and equipment. Food and drug laws make it essential that proper control measures be observed.

CATTLE LICE

Two materials are recommended for use on dairy cattle to control lice.

Rotenone—1 pound of 5% wettable powder in 100 gallons of water as a spray or 1½% dust. This treatment needs to be repeated 15 days following initial treatment.

Pyrethrins plus synergist—(Such as MGK 264 and piperonyl butoxide) Use this material as directed on the labels.

Cattle lice are a problem mainly during the late fall and the winter months.

FLY CONTROL ON ANIMAL

Horn Flies

Methoxychlor—1 tablespoon of 50% wettable powder per animal. (Rub onto back and neck.) DO NOT use methoxychlor sprays on dairy animals.

Malathion—3 tablespoons of 5% dust or 4 tablespoons of 4% dust per animal. (Rub onto back and neck.) DO NOT apply during milking or within 5 hours of milking time.

DO NOT use malathion sprays on dairy animals.

Stable Flies, Horse Flies, Deer Flies, and Mosquitoes

Pyrethrins plus synergist—(Such as MGK 264 and piperonyl butoxide). Apply as instructed on labels.

Water sprays may be prepared by mixing 1 part of the pyrethrin emulsifiable concentrate in from 9 to 19 parts of water. The stronger concentration is better for stable flies, horse flies, and deer flies. Use about 2 quarts of finished spray per animal. Spray at least every other day with the lower concentration.

In addition to the pyrethrin emulsion concentrates, ready-to-use oil base sprays of synergized pyrethrins are available. These should contain at least 0.03% pyrethrins and 0.2% of an approved repellent such as R-11, R-326, or 0.5% tabatrex. Do not use over 2 ounces of actual material per animal.

By W. M. Hantsbarger, Extension Entomologist, and Ervin Kurtz, Extension Dairyman

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CATTLE GRUBS

Rotenone—0.75% to 1.5% dust rubbed well into hair coat and around warbles, at rate of 3 ounces per animal. 2 pounds of 5% wettable powder to 25 gallons of water used in power sprayer as forceful driving spray.

1 pound of 5% wettable powder to 10 gallons of water used as a wash on back and scrubbed into animal's skin.

SPECIAL EQUIPMENT

Treadle Sprayers—Several commercial models are available. The principle used is to have the cattle walk across a small platform, depressing the platform so that a sprayer is activated which squirts a small amount of spray on the backs and legs of the animals. After one animal passes over the platform, a spring pulls the platform back into position and the next animal can be sprayed. The cost of treatment averages about 1 to 1½ cents per day per animal.

For best results with treadle sprayers, observe the following:

1. Locate where cattle must pass through at least once daily. Fencing a water tank so that cattle must pass through sprayer to get at water is one good method.

2. The material to use must be one of the oil type, ready-to-use preparations of pyrethrins. (Water should not be used in this equipment.)

Another automatic sprayer on the market uses the principle of the "electric eye" to activate the sprayer. With this type a water emulsion spray must be used.

Fogging devices for barn interiors. A spraying device is available for semi-automatic spraying inside the barn while the cows are stanchioned. This involves the

use of a nozzle having four outlets for spraying outward from the center of a barn ceiling. The nozzle may be fitted to a half-gallon or gallon jar which contains the insecticide. A small air compressor is used to provide 25 or 30 pounds of air pressure to the nozzle.

This system is designed to apply approximately 2 ounces of spray per minute for 3 to 5 minutes in a barn 60 to 100 feet long. The operator may step out until the spraying is over once the equipment has been started and running properly. For best results all barn windows and doors should be closed while the spraying is going on. Results with this fogging device are quite satisfactory but it will be necessary to spray at each milking time when flies are abundant. A spray of this type can replace wall or residual sprays within the barn. Recommended insecticides for the fogging device are a 0.15% pyrethrin plus synergist, or allethrin plus synergist, using deodorized kerosene as the liquid carrier.

RESIDUAL SPRAYS FOR FLY CONTROL IN DAIRY BARN INTERIORS

Malathion—½ gallon of 57% emulsion or 10 pounds of 25% wettable powder in 25 gallons of water.

Diazinon—½ gallon of 25% emulsion or 4 pounds of 25% wettable powder in 25 gallons of water.

Korlan (Ronnel)—8 pounds of 25% wettable powder in 25 gallons of water, or 1 gallon of the 12% emulsion in 25 gallons of water.

One gallon of the above mixtures will treat from 500 to 1,000 square feet of surface.

SPECIAL PRECAUTIONS

Milk contaminated with certain insecticides is subject to seizure by the U. S. Food and Drug Administration. It is important that insecticides are used correctly on dairy catle. Insecticides play an important part in good management and are helpful if properly used. Some pointers to observe in use of insecticides are:

1. Use only insecticides approved for use on dairy cattle.

You may use:	You cannot use:
rotenone	DDT
synergized pyrethrins	Toxaphene
pyrethrum	Lindane
methoxychlor*	Co-Ral
malathion*	Ronnel
*As a dust treatment on backs	Methoxychlor†
	Malathion†
	Or others
	†As a spray

2. Read labels carefully.

3. If in doubt, check with your county agent on current recommendations.

4. Do not feed diary cattle any hay or feed that has been treated with the wrong insecticide or at the wrong time. Observe necessary waiting periods on forage chemical applications.

CALCULATING INSECTICIDE DILUTIONS AND DOSAGES

1. To figure the percentage of insecticide in a spray mixture.

$$\frac{\text{lbs. insecticide used} \times \%\ \text{active ingredient} \times 100}{\text{gals. of spray mixture} \times 8}$$

Example: One pound of 5% rotenone wettable powder was mixed with 10 gallons of water. What percent rotenone was in the spray?

$$\frac{1 \times 5}{10 \times 8} = \frac{5 \times 100}{80} = 06.25\%$$

2. To figure the pounds of wettable powder needed to mix a spray containing a given percentage of active ingredient:

$$\frac{\text{gals. spray wanted} \times \%\ \text{active ingredient wanted} \times 8}{\%\ \text{active ingredient in insecticide used}}$$

Example: How many pounds of 5% rotenone wettable powder are needed to make 100 gallons of spray containing 0.045% rotenone?

$$\frac{100 \times .045 \times 8}{5} = \frac{36}{5} = 7.2\ \text{pounds}$$

3. To figure the gallons of emulsifiable concentrate needed to mix a spray containing a given percentage of active ingredient:

$$\frac{\text{gals. spray wanted} \times \%\ \text{active ingredient wanted} \times 8}{\text{lbs. active ingredient per gal. in insecticide used} \times 100}$$

Example: How much 20% pyrethrin concentrate is needed to make 10 gallons of spray containing 0.15% pyrethrins?

$$\frac{10 \times 0.15 \times 8}{2 \times 100} = \frac{12}{200} = .06\ \text{gallons}$$

20-25% emulsifiable concentrates usually contain 2 lbs. active ingredient per gal.

40-45% emulsifiable concentrates usually contain 4 lbs. active ingredient per gal.

72-78% emulsifiable concentrates usually contain 8 lbs. active ingredient per gal.

Published and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914, by the Agricultural Extension Service of the South Dakota State College of Agriculture and Mechanic Arts, Brookings, John T. Stone, Director, U. S. Department of Agriculture cooperating.
10M—4-60—7810—File: 15.221